

## Highlights

- Huzzah! Finally some hot & stagnant weather.
- SOS Airforce Schedule.
- Washington VIP visit on Thursday, July 8, 1999.

## Inside

- Tennessee Ozone - a longer term perspective.
- The Hermitage up close and personal!
- 4<sup>th</sup> of July Fireworks from the Polk Building.

# The Daily Plan-it

*The SOS Field Study  
Newsletter  
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Useful, interesting news from around the SOS world!

### Weekend Weather Update

Happy days are here again with some hot and humid "close" weather. Days like these really make one appreciate car, office and home air conditioning and it provides our study with the opportunity to do some fine air quality research. If you liked today, then you'll like tomorrow as the wind directions stay the same and the velocity lightens up to about 5 kts.

The weather is now good for ozone and fine particulate production and accumulation and its good for our favorite utility's bottom line. I daresay that all electrical generation coal-fired boilers and gas and fuel oil turbines will be happily spinning away in the mid-South throughout the weekend and into early next week.

That's because this high pressure ridge will likely stay in control of Nashville's weather until at least Wednesday or Thursday when a return to southerly flow on the backside of the ridge should provide a little more moisture and clouds. Then there's that little tropical wave possibility for next weekend... Until then, look for highs in the mid-to-upper 90's and lows in the mid-70's with more than enough moisture to generate some afternoon thunder.

### SOS Airforce Schedule

The NOAA **WP-3D** will depart BNA at 3:00 PM CDT to conduct a series of crosswind transects at 10 to 20 km increments downwind of the Johnsonville and Cumberland Power Plants to characterize plume chemistry and transport. The crosswind transects will be done at several altitudes to determine the vertical distribution of the plumes within the planetary boundary layer. These transects will continue into the early evening hours to characterize transport and chemistry during transition and evening mixing



conditions.

The NOAA ETL-sponsored **Caribou** will depart John Tune at approximately 5:00 PM CDT to conduct a series of 23 to 28 nautical mile long crosswind transects with separations of 11 nautical miles upwind and downwind of TVA's Cumberland Steam Plant. The winds are predicted to be from the south-southwest. The 4-hour flight will be at 10500 ft MSL returning to John Tune at about 9:00 PM CDT.

The TVA **Bell 205** - which aborted its scheduled flight today because the Johnsonville plume impinged on the Cumberland plume - will plan to depart Dickson Municipal Airport early afternoon to conduct a characterization of the TVA Cumberland and Johnsonville power plant plumes. The helicopter will conduct a series of multiple crosswind transects about 10, 30, and 60 miles downwind of Cumberland. Flight altitudes will be at between 1500 and 2500 ft MSL. The helicopter will refuel at Hopkinsville KY following the 30 mile crosswind transects. The helicopter will return to Dickson in about 7.5 hours.

TN Ozone - A longer-term, broader scale perspective

## By Bill Parkhurst

As may be appreciated in the following figure, there appears to be a relatively persistent increase in the distribution of the low to middle portions of the seasonal, hourly ozone distribution. These data are from the dozen or so long-term (15 + years) ozone monitoring stations in Tennessee dating back to 1980. As such, these are all urban oriented monitoring stations located in or downwind of Tennessee cities. While the upper end of the seasonal distributions are steady or even dropping a bit, the lower end of these distributions appear to be on the rise.

A linear least-squares regression on the 50<sup>th</sup> percentile suggests that mid-distribution ozone levels are increasing just over a percent a year (about 0.6 ppb). While this increase appears reasonably steady, there are occasions when the trend appears to reverse, from 1987 through 1992 for example. Before getting too worked up about these preliminary results I will need to do a more detailed station-by-station analysis to assure the consistency of this pattern.

### Fireworks at the Polk Building!

For those of you with the time and inclination, Bill & Melissa (Bill's far better half) Parkhurst are planning to watch the Nashville Fourth of July fireworks from the top of the James K. Polk Building. From past year's

experience, I believe the Riverfront fireworks will begin sometime between 9:00 and 9:30 PM and so we will plan to arrive at the Polk Building at about 8:45 PM. Please let Bill know if you're interested.

Best of all, we found the dig site extremely visitor-friendly, even though it wasn't near the guided tour time. Knowing as much as we do about Andrew Jackson, it's good to see an exploration of the slave culture of that

time, far better than trying to ignore its importance and contribution to that era.

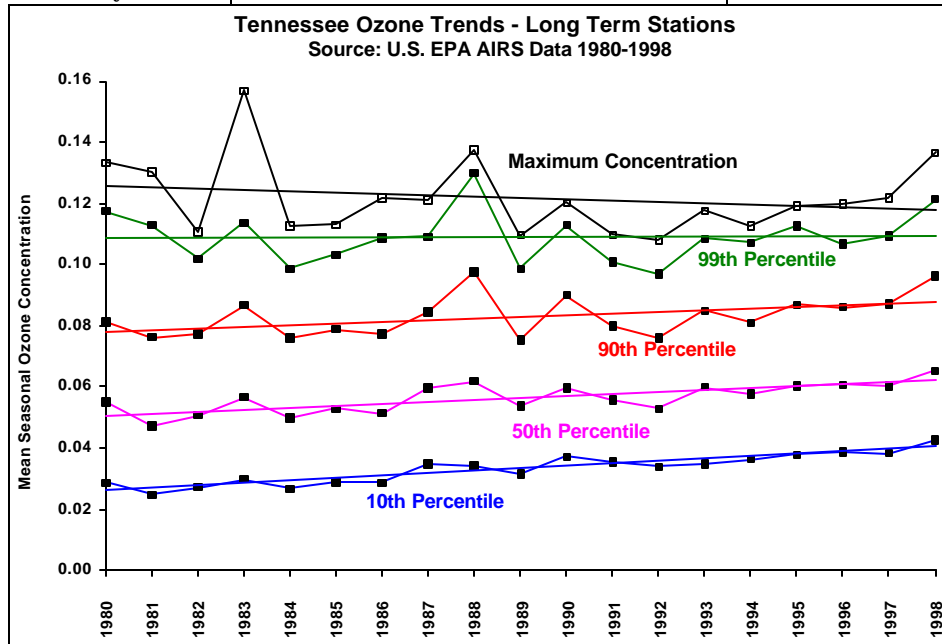
My boys had the opportunity to join several of the diggers in sifting the floor scrapings. In a short time they found shards of glass, china, old nails, bits of metal and bone, and other unknown antiquities (I figured it was seeded, but others

were doing just as well).

The diggers are a combination of grad students and retired volunteers from all over the country and abroad, and my wife and I found their differing but very friendly descriptions of their work most compelling. Best of all, the kids stayed keenly interested (any chance to get dirty in the name of science), and the dig made it much more of a place they could connect with and hopefully remember.

This trip was a bit pricier than other places we've visited around Nashville, \$8.50 with coupon for adults, \$4.50 for kids 6-12, but we found it to be well worth the entry fee.

**\*\* Important note.** We have read that the archaeological dig staff will be off between July 4-12, so you might want to plan to visit after that date if you dig digs.



### Digging the Hermitage!

#### By Jack Parrish

Here's what the Jack Parrish family did with 1/2 of their "hard down day".

In the paper we had read that there was an archaeological dig going on at the Hermitage (Andrew & Rachel Jackson's Home), and there was guided tour of the dig each day at 2 PM. It's been so hot, we took the kids at 9:30 AM, and figured we could scout it out on our own, hopefully.

Not only are the museum and mansion well done and not in the least overstated, but the grounds make for a fine walk, and the trees are recovering well from a lot of destruction caused by last year's tornado. One of the upstairs guides gave us a compelling account of hunkering down in the mansion's cellar during the worst of it.

